

SYSTEM AND METHOD FOR CONVERTING
KINETIC ENERGY FROM BROWNIAN
MOTION OF GASES OR LIQUIDS TO
USEFUL ENERGY, FORCE AND WORK
by: Irving W. Devoe
Docket No.: E2002700001

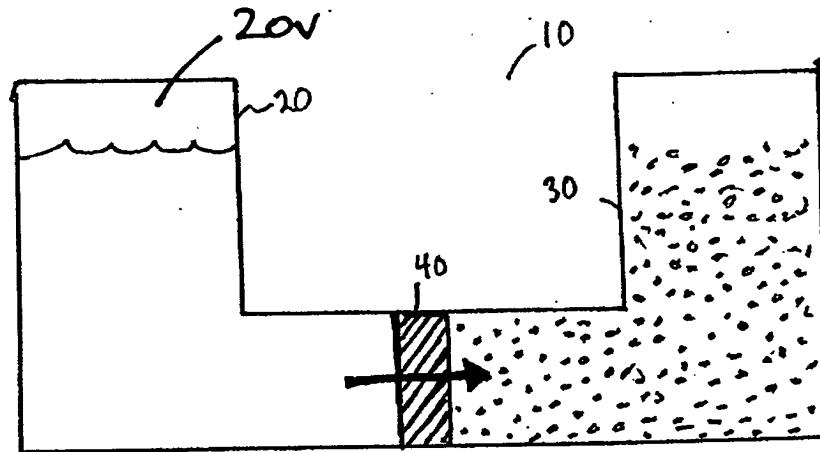


FIGURE 1

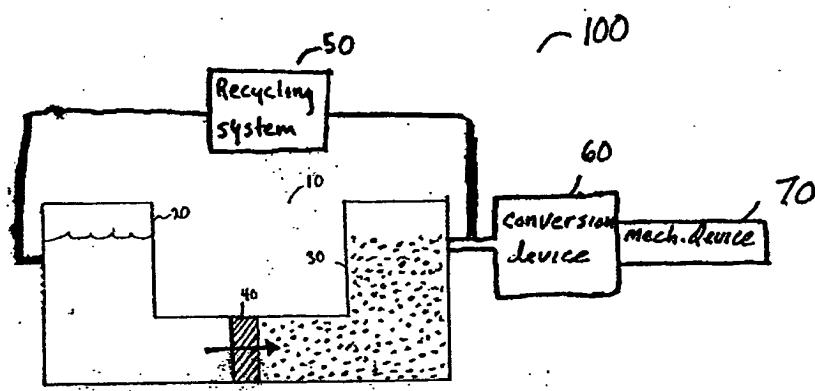


FIGURE 3

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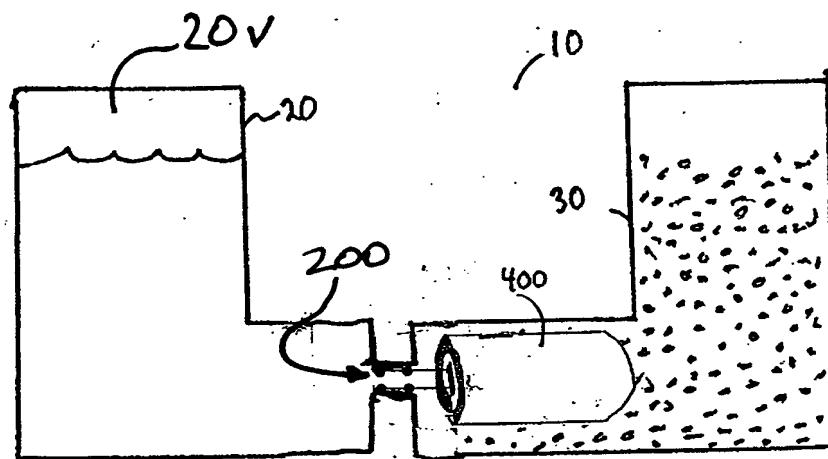


FIGURE 2A

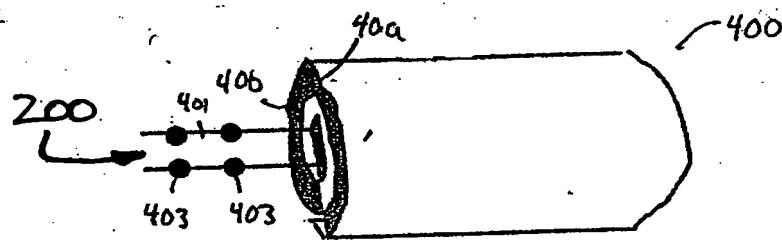


FIGURE 2B

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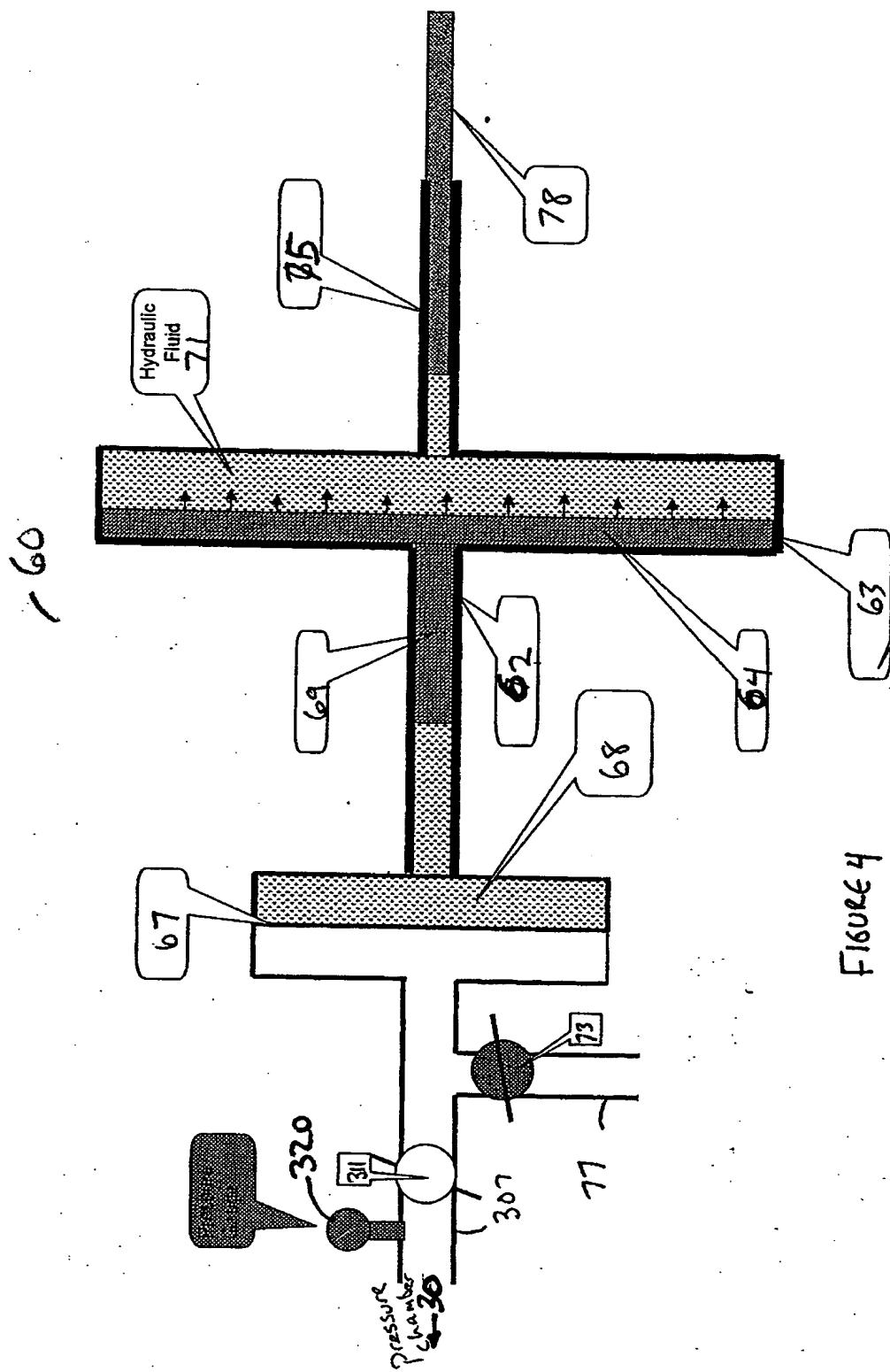
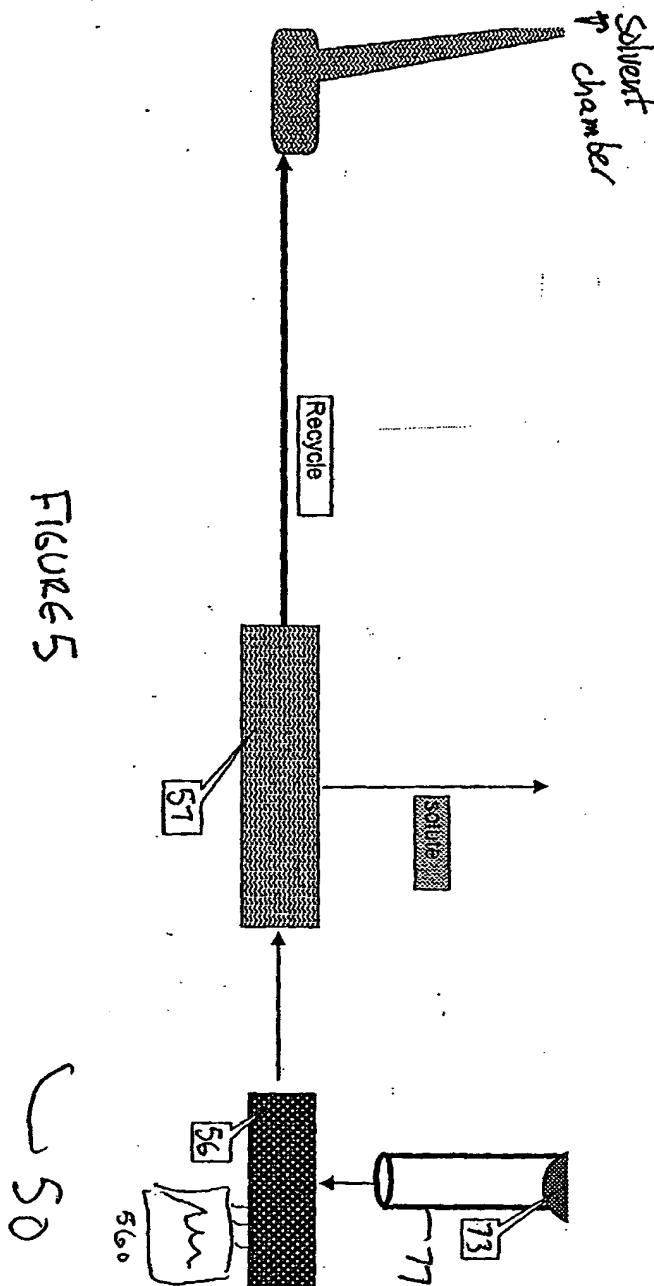


Figure 4

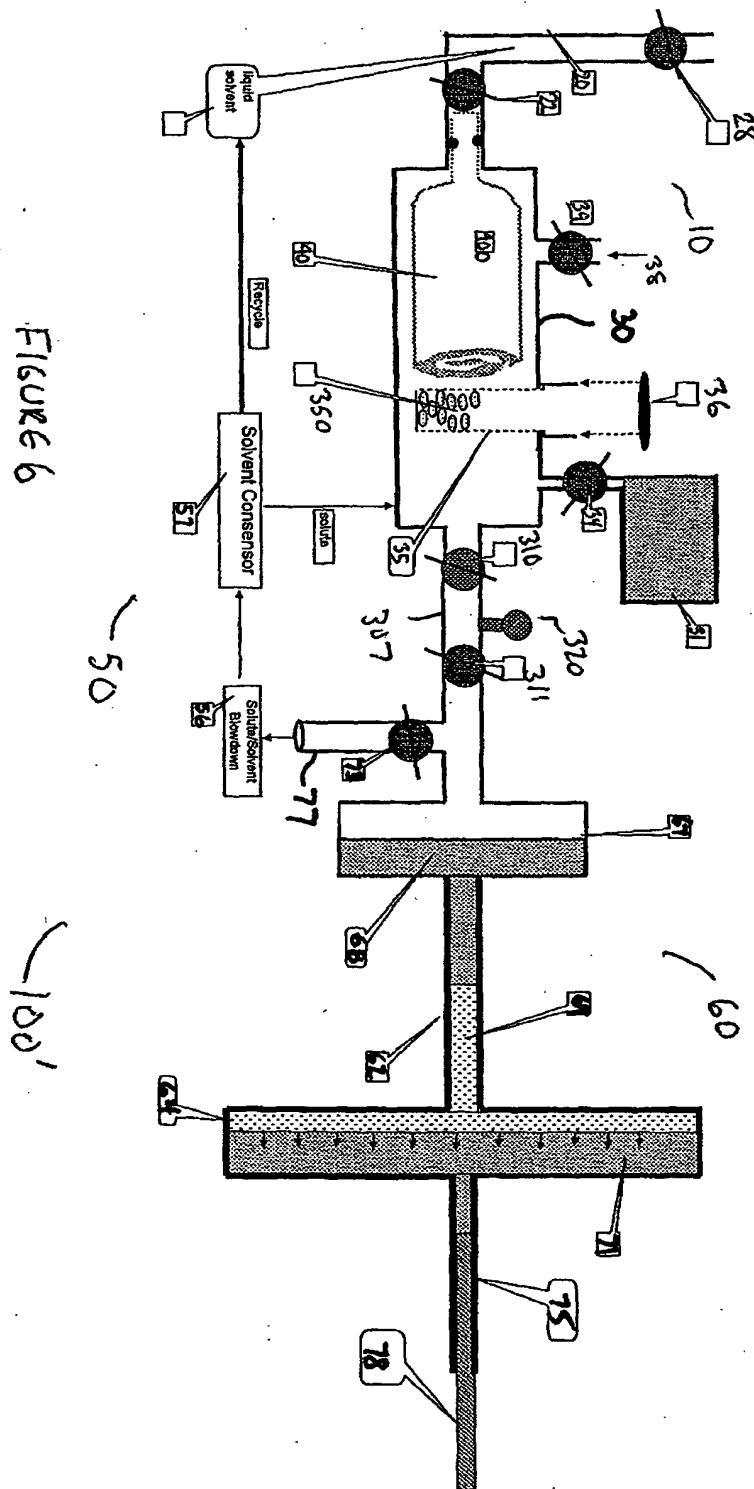
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FIGURE 5



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FIGURE 8

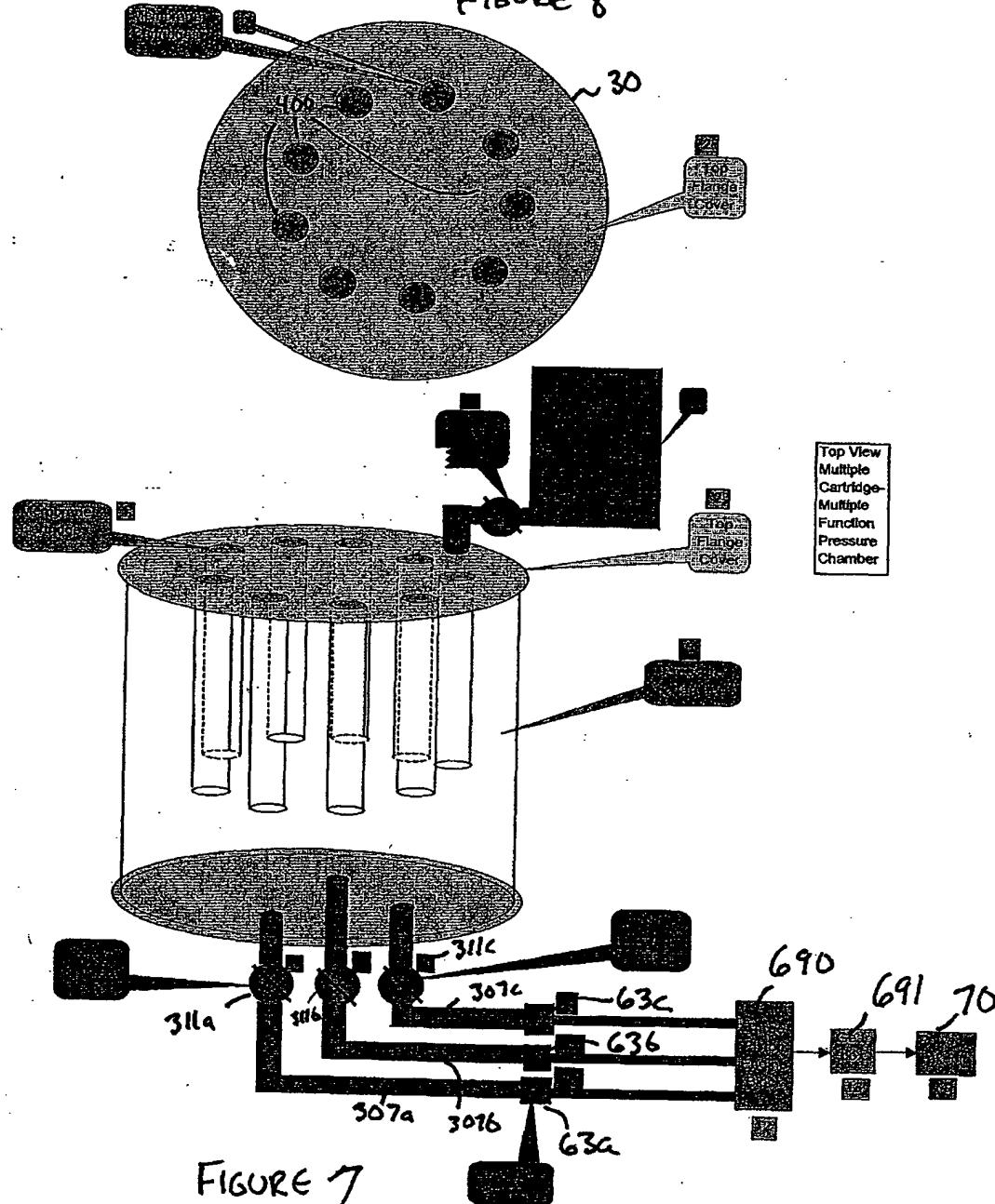
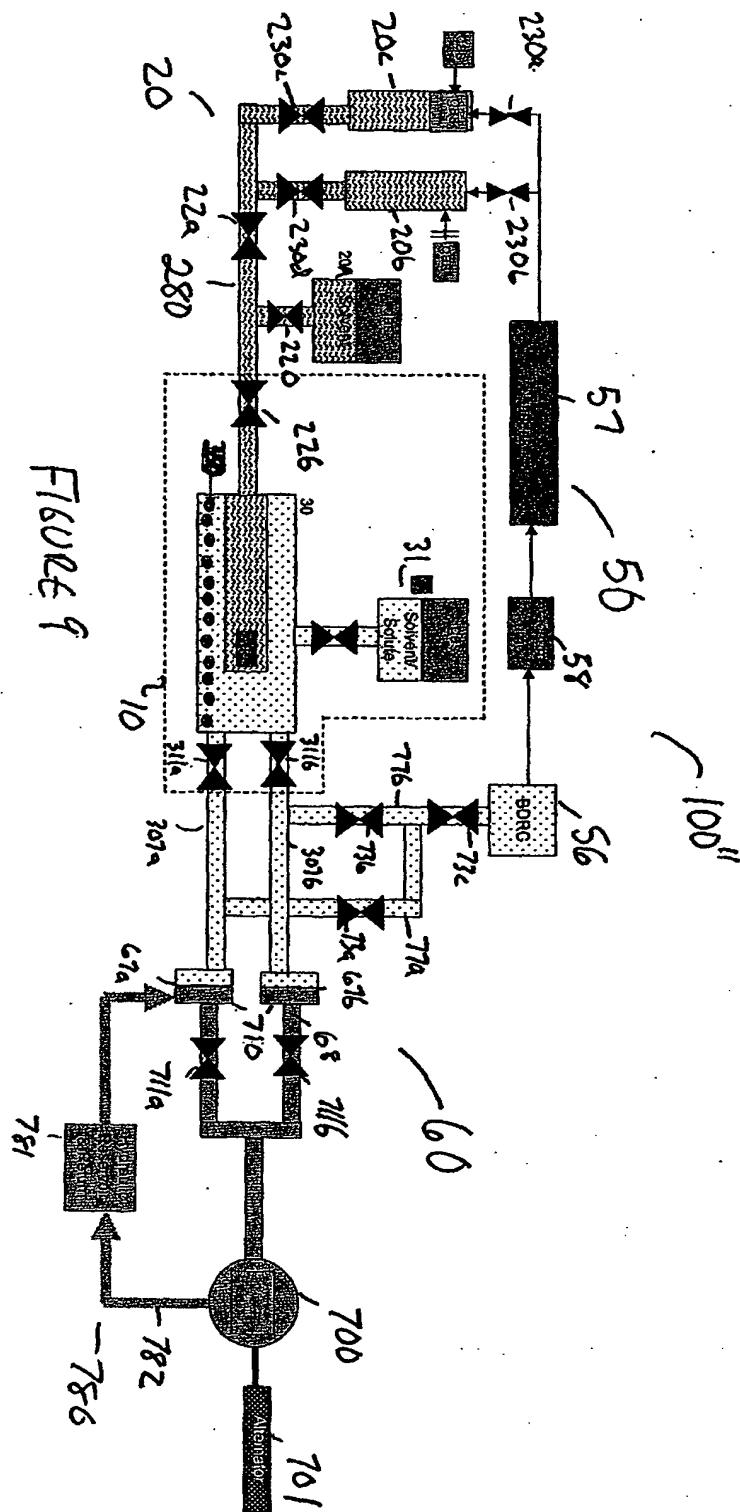


FIGURE 7

**SYSTEM AND METHOD FOR CONVERTING
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Figure 10

Calculated Energy Balances for Several Example Solutes and Solvents in an illustrative embodiment of the invention

	AlCl ₃ .6H ₂ O	AlCl ₃	Sucrose	NaCl	LiCl	LiCl	FeCl ₃ .6H ₂ O	FeCl ₃
Density Solvent	H ₂ O	Methanol	H ₂ O	H ₂ O	H ₂ O	Methanol	H ₂ O	Methanol
Solvent molecular Weight	1.000	0.791	1.000	1.000	1.000	0.791	1.000	0.791
Mass solvent in 1 Kg	18.0	32.0	18.0	18.0	18	32.0	18.0	32.0
Concentration of Pure solvent	55.6	31.2	55.6	55.6	55.6	31.2	55.6	31.3
Heat capacity, Cp	55.6	24.7	55.6	55.6	55.6	24.7	55.6	24.7
Heat capacity, Cp	4.18	2.00	4.18	4.18	4.18	2.00	4.18	2.00
Heat capacity, Cp	1.00	0.48	1.00	1.00	1.00	0.48	1.00	0.48
Energy spent to raise blowdown to 25°C	5.80	1.24	5.80	5.80	5.80	1.24	5.80	1.24
Energy spent to Vaporize at 25°C at vapor pressure	40.65	35.20	40.65	40.65	40.65	35.20	40.65	35.20
Energy spent to Vaporize at 25°C at vapor pressure	0.63	0.24	0.63	0.63	0.63	0.24	0.63	0.24
Volume of blowdown H ₂ O + solute + H ₂ O of hydration (if any)	585	325	485	251	342	253	405	290
Volume of solvent in blowdown	585	192	178	210	210	201	179	210
Molecular elevation of boiling point (N _A)	-0.512	0.830	0.512	0.512	0.512	0.830	0.512	0.830
Barometric correction	0.073	0.112	0.073	0.073	0.073	0.112	0.073	0.112
Elevation of the boiling point	3.7	8.2	3.0	3.7	15.7	8.1	2.8	5.5
Energy required to raise boiling point	0.856	0.407	0.701	0.852	3.641	0.403	0.856	0.274
Daily Energy spent to vaporize liquid in blowdown @ 25°C	34.3	46.5	112.2	132.3	134.0	48.6	112.8	50.8
Power consumption to run pressure pump for Solvent Chamber	823	1115	2693	3175	3217	1167	2708	1218
Power consumption to run vacuum pump for solvent recycle	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Total power consumption Internally	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Total power consumption Internally	827	1119	2697	3179	3221	1171	2712	1222
Temperature in Solvent Chamber at vapor pressure	0.57	0.78	1.87	2.21	2.24	0.81	1.88	0.85
Temperature in Blowdown Receiving Chamber	22	22	22	22	22	22	22	22
Temperature in Condenser at 760 mm Hg	25	25	26	25	25	25	25	25
Solvent Chamber operating pressure	22	22	22	22	22	22	22	22
Solvent Chamber operating pressure	166	188	166	209	209	188	209	166
Pressure Chamber operating pressure	2400	2402	2402	3025	3025	2402	3025	2402
Pressure Chamber operating pressure	207	207	207	250	250	207	250	207
Pressure Chamber operating pressure	3000	3002	3002	3625	3625	3002	3625	3002
Temperature in Pressure Chamber	22	22	22	22	22	22	22	22
Pressure differential across semipermeable membrane (SM)	41	41	41	41	41	41	41	41
Pressure differential across semipermeable membrane (SM)	600	600	600	600	600	600	600	600
Pressure in bladder-type nitrogen pressure buffer tank	207	207	207	250	250	207	250	207
Pressure in bladder-type nitrogen pressure buffer tank	3000	3000	3000	3625	3625	3000	3625	3625
Pressure in blowdown receiving chamber	0.04	0.27	0.04	0.04	0.04	0.27	0.04	0.27
Flowrate of hydraulic fluid to hydraulic motor	101	90	135	70	95	70	113	81
Torque	216	216	216	261	261	216	261	216
Revolutions per time	62	55	82	55	58	42.9	59	49
Horsepower, bhp (U.S.)	2.55	2.27	3.38	2.74	2.89	1.78	3.41	2.02
Horsepower, bhp (U.S.)	152.81	136.18	202.89	164.44	173.10	106.81	204.81	121.39
Efficiency converting torque to electricity	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Kilowatts output (min)	1.71	1.52	2.27	1.84	1.94	1.18	2.29	1.36
Kilowatts output (hour)	102.56	91.38	136.17	110.36	116.17	71.01	137.45	81.47
Kilowatts output (day)	2461	2193	3268	2649	2789	1704	3299	1955
Net Kilowatt output (day)	1634	1074	571	-530	-433	533	687	733
Net Kilowatt output (mon)	49,343	32,442	17,239	(16,008)	(13,063)	16,109	17,734	22,137
Electrical consumption (all-electric home)	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Home serviced	9.9	6.5	3.4	-3.2	-2.6	3.2	3.5	4.4